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CHAETODON TINKERI, A NEW SPECIES OF BUTTERFLYFISH (CHAETODONTIDAE) FROM THE HAWAIIAN ISLANDS

By Leonard P. Schultz

Recently Spencer Tinker, of the Waikiki Aquarium, kindly sent to the United States National Museum three specimens of a rare butterflyfish, taken in a fish trap at a depth of 15 fathoms off Nanakuli, Oahu, T. H. Comparison of these specimens with material in the national collections and considerable study of the vast literature on this group of fishes reveal that they represent a new species, which I take pleasure in naming for Mr. Tinker, in appreciation of his permission to report upon it. I wish to thank Loren P. Woods, curator of fishes, Chicago Natural History Museum, for confirming my opinion that this is a new species.

Family CHAETODONTIDAE

Genus CHAETODON Linnaeus

Chaetodon Linnaeus, Systema naturae, ed. 10, pp. 242, 272, 1758.

CHAETODON TINKERI, new species

Plate 15

Holotype.—U.S.N.M. No. 111976, off Nanakuli, Oahu, T. H., 1949, depth 15 fathoms, preserved by Spencer Tinker, standard length 114 mm.

Paratypes.—U.S.N.M. No. 111977, 2 specimens, taken along with the holotype and bearing same data, 102 to 112 mm.

Description.—The following counts are recorded first for the holotype then for the paratypes, respectively: Dorsal rays XIII, 18; XIV, 19 and XIII, 21; anal rays III, 17; III, 16; and III, 16; pectoral I, i, 13 in all specimens; pelvics always I, 5; branched caudal fin rays 8+7; 8+7; 8+7; scale rows from upper edge of gill opening to base of caudal fin 34; 37 and 36.

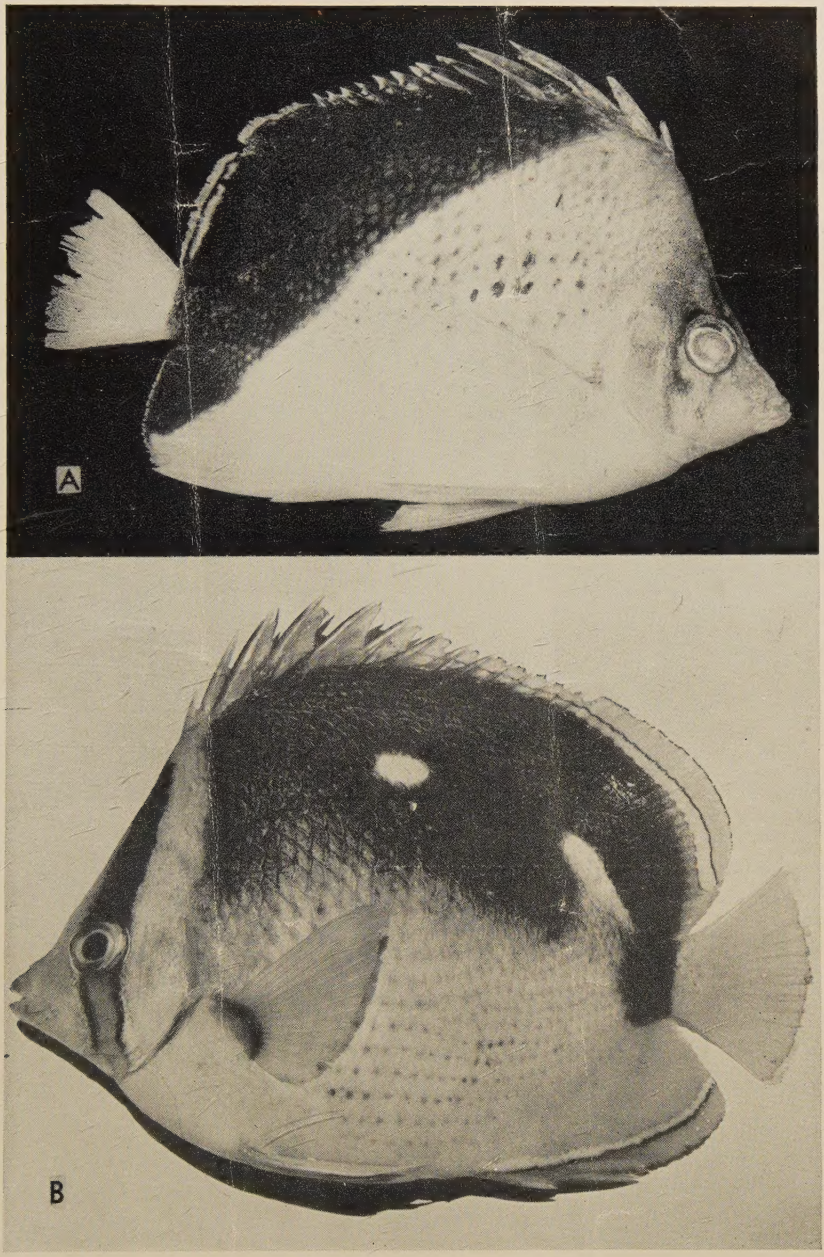
Certain measurements were made, and these, expressed in thousandths of the standard length, are recorded first for the holotype and then for the paratypes, respectively. Standard lengths in mm. 114; 112 and 102. Greatest depth of body 632; 638 and 628; length of head to rear of fleshy operculum 318; 295 and 304; postorbital length of head 129; 130 and 130; length of snout 127; 112 and 108; diameter of eye 97; 93 and 101; least depth of caudal peduncle 105; 103 and 98; length of pectoral fin 263; — and — (broken); length of pelvics 272; 266 and 270; longest dorsal, third or fourth spine, 285; 268 and 284; longest soft dorsal ray 158; 179 and 137; longest anal spine, second, 290; 250 and 275; longest soft anal ray 255; 228 and 245; angles formed by dorsal and ventral profiles of head 80° to 95°.

Color in alcohol.—Ocular band present but indistinct, edges brownish, central area pale, wedge-shaped above eye, oblong below eye, with a central area of brownish sometimes a streak in form of a small blotch; ocular band faintly visible on subopercle, but not occurring on breast or under side of head; snout pale; upper lip a little dusky; pelvics pale; caudal fin pale except a narrow blackish posterior edge, broken off on holotype and one paratype; posterior-dorsal part of body and dorsal fin with a broad black band extending from base of second dorsal spine obliquely across body and posterior part of anal fin a little behind tips of anal spines; margin of dorsal fin white, with a narrow black submarginal streak from tip of fourth dorsal spine to last dorsal soft ray, then below this on soft dorsal a narrow white band somewhat broken; anal fin narrowly margined with white; anterior ventral part of body pale or white, with center of each scale marked with a small brownish spot; several of these spots are especially intense brown behind and above axil of pectoral fin.

Color when alive.—Pale part of body probably was yellow, as some of this color was present when specimens were received.

Remarks.—Since the finding of an unnamed butterflyfish is a rare occurrence, special care was taken to search the literature for species close to the new one. None of the important contributions on the Chaetodontidae or faunal studies that are listed in the accompanying Literature Cited contain the present species from the Hawaiian Islands, and it does not appear in any of the works on the fauna of that area.

Chaetodon tinkeri, with no vertical oblique or lengthwise dark streaks on the sides, no transverse dark bars on caudal fins, and no black pelvic fins, differs from a vast group of species; among those with black snouts it is closest to *C. nigrirostris* (Gill) (fig. 94) of the eastern tropical Pacific, but *tinkeri* differs in having a pale snout and in lacking black on the posterior border of the gill cover; the chief resemblence is a broad black band dorsally. *C. tinkeri* resembles



A, One of the paratypes of *Chaetodon tinkeri*, new species; photograph by Spencer Tinker.
B, *C. quadrimaculatus* Gray, from the northern Marshall Islands.

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but two species of *Chaetodon* that have white snouts, *C. quadrimaculatus* Gray and *C. nippon* Döderlein. The latter species lacks the rows of brownish spots on the sides so prominent in *C. tinkeri;* the broad dark band is more vertical in position in *nippon* than it is in *tinkeri* and covers most of the anal fin in *nippon,* whereas in *tinkeri* the anterior two-thirds is white or pale; *nippon* lacks the submarginal

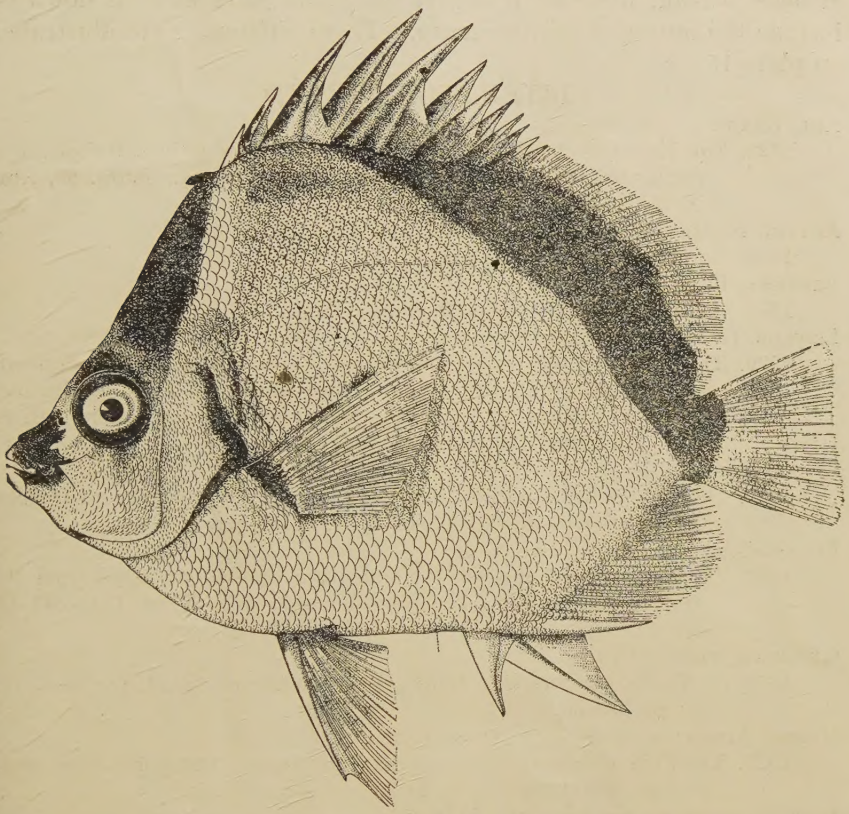

FIGURE 94.—*Chaetodon nigrirostris* (Gill) from Clarion Island.

dark streak and then a white streak on the dorsal fin; the pelvics of *nippon* are dusky or blackish but white in *tinkeri.* My comparison of *nippon* was based on Steindachner and Döderlein's plate 4, figure 2; on the six types of *Chaetodon decipiens* Ahl, 1923, from Misaki, Japan, U.S.N.M. Nos. 5082 and 72111; and on *Chaetodon carens* Seale, 1910, as figured by Herre and Montalban in their plate 15, figure 2. Two other species have been referred to *nippon* as synonyms by authors, *Chaetodon ocellifer* Franz, 1910, plate 4, figure 35, and *Osteochromis larvatus* Franz, 1910, plate 5, figure 43, both from Japan, neither of which closely resembles *C. tinkeri.*

There remains but a single species, *Chaetodon quadrimaculatus,* that is close to *C. tinkeri* and that occurs in the Hawaiian Islands. Both

species have brownish spots on the centers of the scales on the sides in the pale area; the broad blackish dorsal band on *C. quadrimaculatus* covers practically the entire dorsal half of the body anteriorly, whereas that area on *tinkeri* is white, and there are usually two distinct white areas in the black band of *quadrimaculatus*, which are lacking in *tinkeri;* the anal fin of *quadrimaculatus* is white except for a submarginal black streak, whereas in *tinkeri* the black band extends down to include the posterior third or more. These differences are illustrated on plate 15.

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